



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,375	08/28/2003	Crispin O'Brien	2003-IP-011793U1	7326
7590	05/17/2005		EXAMINER	
Robert A. Kent Halliburton Energy Services 2600 South 2nd Street Duncan, OK 73536			COLLINS, GIOVANNA M	
			ART UNIT	PAPER NUMBER
			3672	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/650,375	O'BRIEN ET AL.	
	<b>Examiner</b> Giovanna M. Collins	<b>Art Unit</b> 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 24 February 2005.
- 2a) This action is **FINAL**.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-5,7-12,15-19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5,7-12, 15-19 and 21 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>20050203</u> .	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5,7-12,15-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pence Jr. 3,765,488 in view of Harms 5,271,466.

Pence discloses a method of fracturing a subterranean formation comprising the steps of: placing a first fluid comprising a foamed carbon dioxide fluid, an emulsion of carbon dioxide, or a carbon dioxide gel (col. 2, lines 1-4) into a subterranean formation at a pressure sufficient to create or extend at least one fracture therein and the first fluid is not crosslinked. Pence does not disclose a second treatment fluid. Harms teaches placing a second fluid comprising an alkaline cross linked fluid (col. 4, lines 54-60) into the subterranean formation at a pressure sufficient to cause the second fluid to enter the fracture created or extended by the first fluid; and, releasing the pressure on the subterranean formation and thereby allowing the first fluid to intermix with the second fluid wherein the first fluid lowers the pH of the second fluid and causes the second fluid to reduce viscosity (col. 6, lines 16-34). Harris teaches adding the second fluid enhances proppant placement and fluid cleanup and minimizes formation damage (col. 4, lines 50-53). As it would be advantageous to enhance the proppant placement and fluid clean up and minimize formation damage it would be obvious to one of ordinary skill in

the art to modify the method disclosed by Pence to add a second fluid as taught by Harms.

Referring to claims 2,9 and 16, Harms teaches the second fluids crosslinkages are reversed at a ph below about 8 (col.6, lines 21-26).

Referring to claims 3,10 and 17, Harms teaches the second fluid comprises a hydratable polymer (col. 4, line 65- col. 5 line 1).

Referring to claim 4,11,18, Harms teaches the second fluid is crosslinked with a crosslinking agent comprising alkali metal borates, borax, boric acid, or borate ions (col. 5, lines 16-25).

Referring to claims 5,12, and 19, Harms teaches the second fluid comprises a guar or guar derivative fracturing fluid crosslinked with a borate crosslinking agent (col. 4, line 65- col. 5 line 1).

Referring to claims 7 and 21, Harms teaches the second fluid comprises proppant 9col. 2, line 65-col. 3 line 1).

Referring to claim 8, Pence discloses a method of gravel packing along a well bore comprising the steps of placing a first fluid comprising a foamed carbon dioxide fluid, an emulsion of carbon dioxide, or a carbon dioxide gel (col. 2, lines 1-4) into a subterranean formation at a pressure sufficient to create or extend at least one fracture therein and the first fluid is not crosslinked. Pence does not disclose a second treatment fluid. Harms teaches placing a second fluid comprising an alkaline cross linked fluid (col. 4, lines 54-60) into the subterranean formation at a pressure sufficient to cause the second fluid to enter the fracture created or extended by the first fluid; and, releasing

the pressure on the subterranean formation and thereby allowing the first fluid to intermix with the second fluid wherein the first fluid lowers that pH of the second fluid and causes the second fluid to reduce viscosity (col. 6, lines 16-34). Harris teaches adding the second fluid enhances proppant placement and fluid cleanup and minimizes formation damage (col. 4, lines 50-53). As it would be advantage to enhance the proppant placement and fluid clean up and minimize formation damage it would be obvious to one of ordinary skill in the art to modify the method disclosed by Pence to add a second fluid as taught by Harms.

Referring to claim 15, Pence discloses a system for treating subterranean formation comprising a first fluid comprising a foamed carbon dioxide fluid, an emulsion of carbon dioxide, or a carbon dioxide gel (col. 2, lines 1-4) and the first fluid is not crosslinked. Pence does not disclose adding a second fluid. Harms a second fluid comprising an alkaline cross linked fluid (col. 4, lines 54-60). Harris teaches adding the second fluid enhances proppant placement and fluid cleanup and minimizes formation damage (col. 4, lines 50-53). As it would be advantage to enhance the proppant placement and fluid clean up and minimize formation damage it would be obvious to one of ordinary skill in the art to modify the method disclosed by Pence to add a second fluid as taught by Harms.

#### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-5,7-12, 15-19 and 21 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 571-272-7027. The examiner can normally be reached on 6:30-3 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Gmc*  
gmc

  
**David Bagnell**  
**Supervisory Patent Examiner**  
**Technology Center 3670**